

**HP 9836A ...
The computer designed for you.
By you.**

hp HEWLETT
PACKARD



We put ourselves in your place

It's nothing new

For over 40 years, we at Hewlett-Packard have been designing products *because our customers use them*.

So to a great extent, it was *your* disciplines, *your* comments and *your* observations that guided us in building our computers. Added to our well-established leadership in electronics, this has allowed our computers to steadily evolve to the high state of perfection you see today.

This legacy now allows us to bring you the HP 9836A Desktop Computer. It's a

high-performance, low-cost desktop that is ideal for computer-aided engineering (CAE) and other technical applications, rivaling the performance of computers much larger and more expensive.

We did our research

We investigated a lot of disciplines in designing the 9836 – perhaps yours.

We went to those who do computer-aided engineering (CAE) for a living. We learned about circuit response and structural analysis, mathematical simulation and modeling. We

learned how people “design” a system – and test it – without even assembling it. We spent time in the lab environment. We talked to engineers and mathematicians, technicians, R&D experts, marketing people and



The result ...

The HP 9836A ... The computer designed for you. By you.

... a technical professional's computer with up to 2 megabytes of read-write memory and the speed to use it. The ideal machine for CAE – plus CAT

and whatever other technical use you might envision. To substantiate its claims, the 9836 features a full 12" (310 mm) screen and twin flexible disc drives, plus extensive graphics capabilities and an array of standard peripherals and instruments to build almost any system imaginable. And more. And at less cost than you'd imagine.



applications programmers. And we learned your needs.

We went to those who do primarily computer-aided testing (CAT) for a living. We spent a lot of time in the manufacturing environment. We talked to electrical and chemical engineers,

metallurgists and even biologists. And we learned *your* needs.

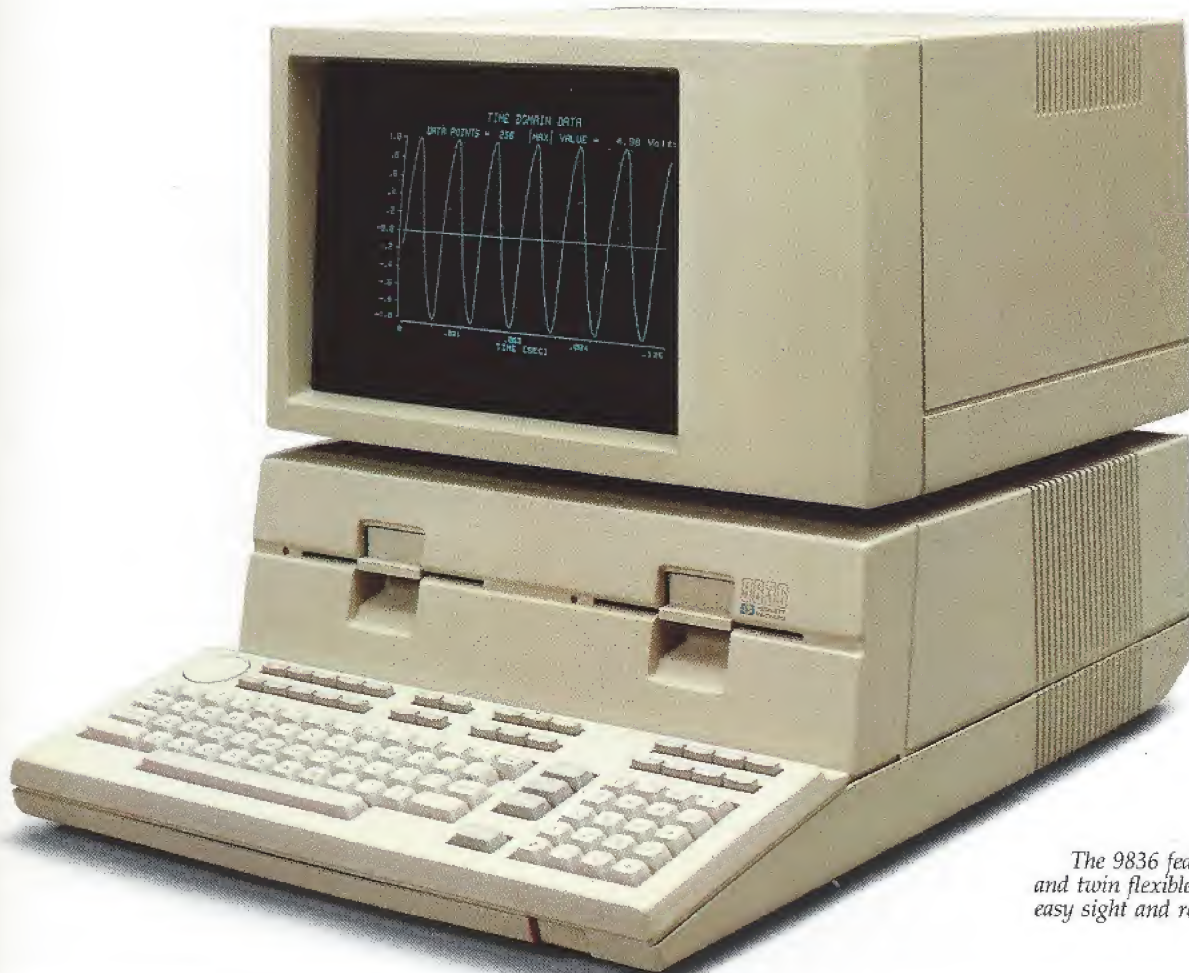
Finally, we just went to technical people in general — those at the “workbench.” We felt you needed some kind of “personal” computer to enhance your individual productivity on the job. You gave us more information.

Only then did we go to the drawing board.

We had plenty to think about. After everything had settled, there seemed to be one common denominator. All of the CAE, CAT and other technical people we talked to shared one need — the need to *gather data*

and interpret it quickly. And at a reasonable cost.

Naturally, we had some good guidance in the 9836's predecessors, the HP 9845, 9835, 9826 and 9825, all strong contenders. The 9825 alone has over 28,000 satisfied owners in the field.



The 9836 features a 12" (310 mm) CRT and twin flexible disc drives — all within easy sight and reach.

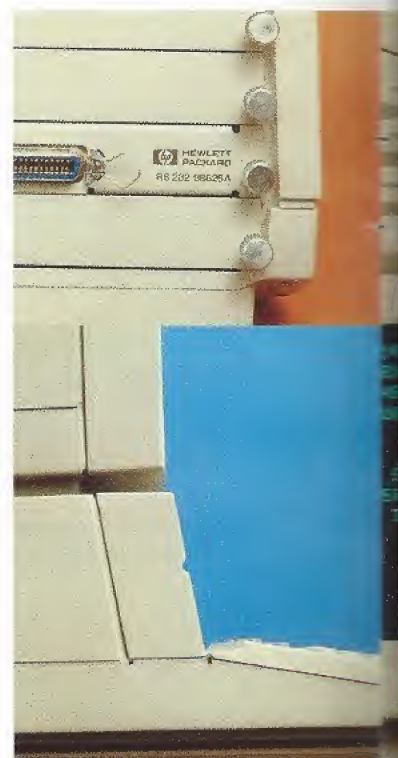
Designed to be used

When we say "designed for you," we mean just that — designed. Look at the 9836. From the very outset, you know it's special — all lean lines and integrated features, including 128-character ASCII keyboard (German, French, Spanish, Swedish, Finnish and Katakana options) with numeric pad and

special function keys built-in. You can tell a great deal of "human engineering" went into it.

And best of all, it's a *desktop* computer, taking up little more space than an electric typewriter — but what a difference! We know it's a "desktop computer" because we invented the term. By inventing the product.

But design alone is not enough, because ...



It's what's inside that counts

A pretty exterior is one thing, but our computer does more than just look good — it performs.

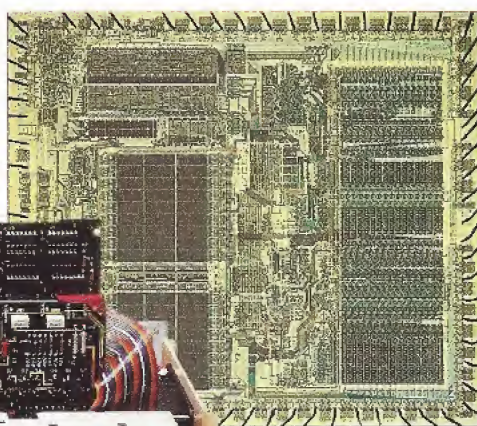
The heart of the HP 9836A is the Motorola MC68000 micro-processor, a powerful state-of-the-art chip that features an 8-MHz clock, 16-bit CPU and 32-bit internal architecture. The 9836 incorporates up to a full 2 megabytes of read/write memory, expandable in 256K-byte increments via special RAM (random-access memory) boards. In addition, its twin 5¼" flexible disc drives each have 260K bytes

of storage, adding another 520K bytes in all. So the raw memory and processing capacity is there to solve all those complex CAE, CAT and other technical applications you told us about.

And the 9836 performs *easily*. There are 10 shiftable special function keys for fast and easy system control. A special rotary control knob allows you to scroll quickly backwards or forwards through program instructions for easy editing. And it can also be used for program interrupts, instrument calibration, software simulations, controlling motor speeds — almost any use you can imagine.



The Motorola MC68000 chip, the "heart" of the HP 9836A, is a state-of-the-art 16-bit microprocessor.



Via special 256K-byte RAM boards, the 9836 can be upgraded to a full 2 megabytes R/W memory.

Setting up quickly

You told us you needed to "gather data and interpret it quickly."

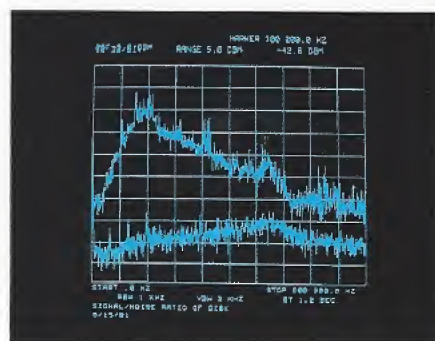
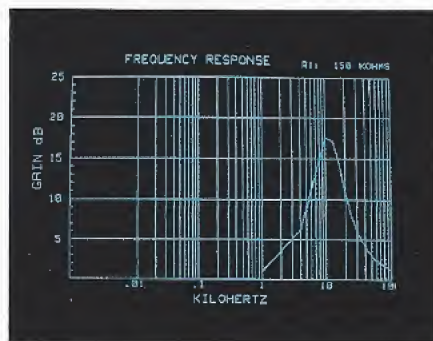
We took it to heart — in two ways.

One, we knew you needed to develop your *system* quickly — what good is a fast computer if you never figure it out? So the 9836 comes ready to use — essential peripherals are built in. The BASIC and HPL language systems allow even the beginner to start programming quickly (for more advanced programmers, Pascal and FORTH* languages are also available). Several built-in features make for quick and easy editing, such as syntax-checking

on line entry, single-stepping and tracing of program steps.

Second, there is the speed of the CPU itself. Because of its 8-MHz clock, the 9836 runs at extremely high speeds. When you connect a test system to the 9836, the system's speed will probably be limited by the instruments or devices them-

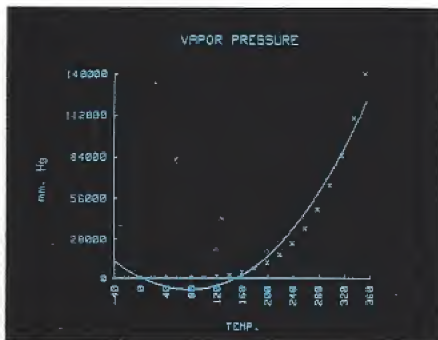
selves and not the 9836! Whether in direct monitoring or processing pre-collected data, the 9836 will give you the speed and power of much larger computers — it won't tie up the system "number crunching" while other functions go unattended.



* FORTH is a third-party language supplied by the HP PLUS program.



To further "ease the pain" of building your system, the 9836 incorporates several levels of programmable interrupts as well as built-in I/O drivers. A special "Powerfail" option allows the 9836 to "ride out" momentary power lapses and automatically interrupts the system for longer ones, so there is no loss of data.



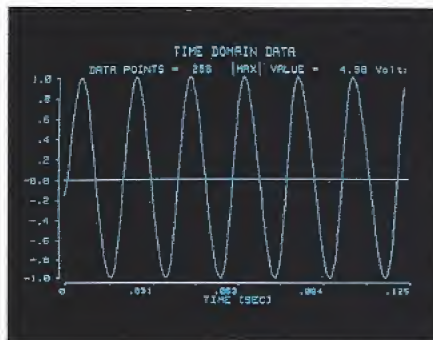
Graphics — A better picture

More and more of you told us you're interested in graphics today as a way to display your data — and why not? A picture is worth a thousand words — or numbers. And HP has been a leader in developing sophisticated graphics systems, like our HP 9845C computer, for example.

But graphics in a low-cost black-and-white system was something else you wanted — and we capitalized on that idea, too. With the 9836.

The 9836 desktop computer contains a sophisticated graphics system which allows you to interpret the most complex, vol-

uminous data in simple graphic form. The raster resolution is a detailed 512 x 390 pixels to give clear, vivid displays of bar charts, X-Y graphs and even complex functions like circuit diagrams or 3-D wire frames. Compatible printers provide almost instant read-out in hard copy — in some cases, only



seconds are required to collect data, process it and render it as a graph on paper (as well as on the screen).

The CRT on the 9836 features a non-glare cover, providing a high-contrast image which is easy on the eye. The full 12" (310 mm) CRT is particularly useful for those requiring constant or detailed graphics — and it has a full 80-character line for ease of programming. For those requiring color, a special I/O card can be used in conjunction with a separate color CRT.

Reliability — From the inside out

Why do we mention reliability as a feature?

Because it's just that — built-in. Like a ROM or transistor, quality and reliability have been designed *into* the 9836, not just added on.



For example, testing — every 9836 is subjected to abnormal extremes of temperature and operational stress to insure dependable operation — *before* it gets to you.

Beginning with the finest components on the market, we design our products from the inside out to be sound — and then put them to the test. It's worked well. Hewlett-Packard has a reputation for quality and reliability unsurpassed in the industry.



Every 9836 is subjected to extremes of temperature and operational stress before release.

It speaks your language

Our machine is multilingual. It "speaks" several languages — BASIC, HPL, Pascal and FORTH. BASIC and HPL are available in either RAM (random-access memory) or ROM (read-only memory) options for maximum flexibility.

BASIC is the language for the beginner — or the pro. This "universal language" of computers is noted for easy syntax, high-level commands and easy transferability of software. For the sophisticated user, BASIC is fast, powerful (in computation and I/O) and offers a wide range of flexibility in subprograms. And our brand of HP Enhanced BASIC offers many of the best features of both FORTRAN and Pascal. We justifiably call it "the world's finest BASIC."

HPL was introduced on two of our earlier desktop computers (the 9820 and 9821) and was catapulted to popularity on the 9825. HPL offers scientists, engineers and other technical users efficiency of storage, formula-oriented syntax and fast execution time, among other features.

Pascal, our newest offering, is "the computer expert's language." Its structure breaks down complex programs and data into manageable units for increased productivity and better program maintenance. As a compiled language, it has an inherent advantage in speed, allowing the expert to "fine-tune" the 9836 for specific needs.

FORTH comes through HP PLUS, our third-party software program. It is extremely efficient (requiring only 64K bytes of memory) and offers multi-tasking.


With its great flexibility, chances are the 9836 speaks *your* language.

BASIC

```

7190 SUB Screen(INTEGER F(*
7200 OPTION BASE 1
7210 COM INTEGER Months,Nop
7220 COM /Safe/ INTEGER Sto
7230 COM /Info/ Months$(*),
7240 INTEGER Whichmonth,I,K
7250 Gear=5
7260 K=0
7270 Whichmonth=Lowmonth
7280 ON KEY 0 LABEL "LAST M
7290 ON KEY 1 LABEL "NEXT M
7300 ON KEY 9 LABEL "EXIT"
7310 Month_loop: !
7320 REPEAT ! Whichmonth 1
7330 Clearscren
7340 PRINT "FORECAST FOR
7350 PRINT TABXY(1,3);"1
7360 FOR I=1 TO Nocats
7370 PRINT TABXY(1,2*
7380 PRINT TABXY(16,2
7390 PRINT TABXY(1,2*
7400 PRINT TABXY(20,2
7410 PRINT USING "#,4
7420 NEXT I
7430 FOR I=1 TO Nocats
7440 ON KNOB .01 GOSU
7450 DISP "PLEASE ENT
7460 PRI ,2
7 ON se
Ans
Ans
put: IF ND
ser
UNTILE Ans$(">"
7 Key=NUM(Ans$)
7 Key=255 TH
7 Ascii=0
7 Key=NUM(An
7

```

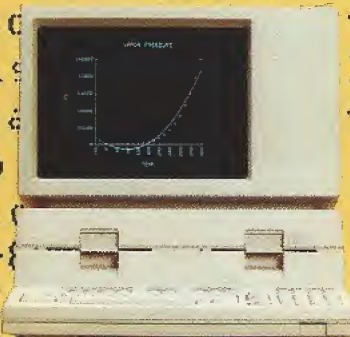


HPL

```

0: % "Rotating plane with fi
1:
2: if machine=1 or machine=4
3: if machine=2;24960)S
4: dim B$(50)
5: "
6: int((avm-50)/(S+16))N;fx
7: pkbd " wrt 0,str(N,10)&"
8: 360/N)R;wtb 16,char(12)
9: .32)C;1)K;dim A$(N,S1,SIN
10: deg
11: for I=0 to N-1,sin(I*R))
12: for I=1 to N by K
13: gsb "frame"
14: 31-2N)Q;gclr;2)S;2N)G;1.
15: for X=-40 to 40 by S;1)P
16: for Z=40 to 120 by S
17: -20+H/((X-Q)^2+(Z-83)^2)
18: cll 'plot'(X,Y,Z,P);2)P
19: next Z,next X
20: for Z=40 to 120 by S;1)P
21: for X=-40 to 40 by S
22: -20+H/((X-Q)^2+(Z-83)^2)
23: cll 'plot'(X,Y,Z,P);2)P
24: next X;next Z
25: gstore A$(I);next I
26: pkbd tr(N,10)&
27: "dis I=1 to N
28: gloa t T;I)J;n
29: gto
30: "plo
31: p3-8
32: Cll
33:
34: plt p6/p7,p2/p7,p4;ret
35: "frame":
36: if machine#1;dsp B$&"
37: if machine=1;dsp B$&"Fra
38: ret
39:

```

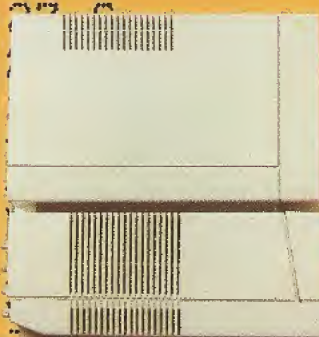


Pascal

```

1:D 0 $debug on$
2:D 0 program plays
3:D 1 type
4:D 1 string100 =
5:D 1 var
6:D -1176 1 rf,wf: text;
7:D -1380 1 word,lin: st
8:D -1384 1 linptr,len:
9:D -1385 1 input_ok: bo
10:D -1412 1 name: string
11:D -1412 1 const
12:D -1412 1 diglets=[ '0'
13:S
14:D 1 procedure new
15:C 2 begin
16*C 2 linptr := 1;
17*C 2 if not eof(r
18:C 3 begin
19*C 3 readln(rf,1
20*C 3 input_ok :=
21:C 3 end
22:C 3 else
23*C 3 input_ok :=
24*C 2 if input_ok
25*C 3 if strlen(1
26*C 2 end;
27:C
28:C
29:C
30:C
31:C
32:C
33:C
34:C
35*C 3 if li
36:C
37*C
38*C
39*C 1inp
40*C if (1 pr

```



Peripherals — The system-builders

No computer, however sophisticated, will be of much value to its owner if it is "I/O-bound" — that is, if it is "jammed" by too much incoming data or incompatible peripheral devices.

Hewlett-Packard has been a leader in the standardization of interfaces and peripheral devices. Our HP-IB (Hewlett-Packard Interface Bus) is the industry model for IEEE Standard 488-1978, but more than

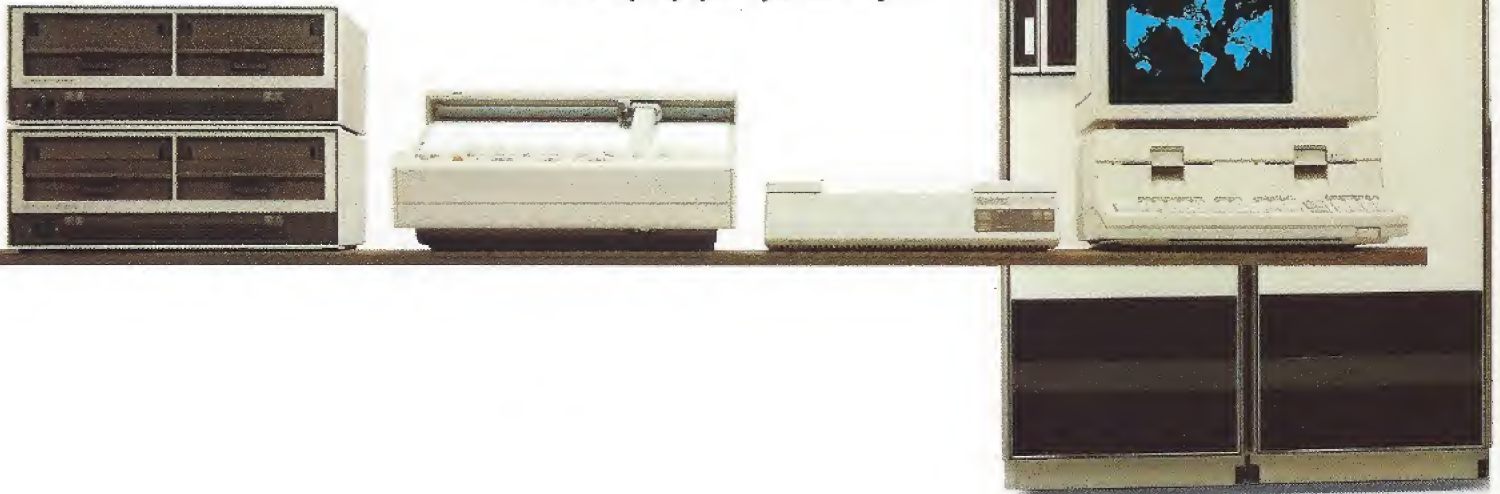
that — it represents a decade of experience in linking computers with measuring instruments, printers, plotters, mass storage devices and other peripherals. All of these are available for the 9836.

This means you'll have room to grow as your needs grow — reconfiguring or expanding your system will present no problem. You may even decide to create multiple design stations with several 9836's tied to shared hard discs and printers. Or you may want to create automated test stations by networking the

9836's to a larger computer like the HP 1000 for typical factory test applications. In either case, the resources will be there.

In addition, the 9836 comes with a demo pack to "show off" its extensive capabilities, and a utility pack. A special software converter allows easy conversion of all 9845, 9835 and 9825 programs to the 9836 system. And our "HP Plus" program represents a growing body of programs from HP and third-party software suppliers to help solve your applications problems.

A full line of peripherals — printers, plotters, mass storage, etc. — allows you to build nearly any system you can imagine.



From the company that brought you ...

... just about everything. At least in electronics.

When you buy a 9836 desktop computer — or any other HP product — you're buying from a company with over 40 years' experience in producing everything for the electronics market, from audio oscillators to gas chromatographs, from frequency synthe-

sizers to sweep oscilloscopes to pulmonary monitoring equipment. And, of course, desktop computers.

You're buying from a company that has set the standard for many of these products.

You're also buying from a service organization, a huge network of facilities throughout the world providing instant

service and warranty backup. We deploy well-trained staffs of technical experts to assist customers in overcoming any problems, technical or procedural.

That's the story on our new 9836. To find out more, call your local HP sales representative for a "test run." And don't feel surprised if you feel a touch of nostalgia. After all, *you* designed it.



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